

**CLAIMS**

1-7. (canceled)

8. (currently amended) An invertible optical microscope which can be assembled as an upright variant or as an inverted variant, comprising:

a stand;

a first imaging system comprising an objective and a tube;

a first illumination system for vertical illumination comprising a lamp, a collector, and a condenser; and

an object stage ~~which is~~ located below the objective for the upright variant and above the objective for the inverted variant;

said objective which is enclosed together with a beam-splitting deflecting element for incident light reflection being an objective module;

said enclosed condenser being an illumination module;

said first imaging system for implementing the upright variant being determined by the objective module, the tube, and a first optical path lying between the tube and the objective module that is mounted above the object stage;

a second imaging system being provided for the inverted variant, ~~which~~ the second imaging system being determined by the objective module, the tube and a second optical path lying between the tube and the objective module that is mounted below the object stage; and

optical elements present in the first optical path or second optical path being calculated in such a way that an imaging of an object by the first imaging system is identical to an imaging of the object by the second imaging system; and

wherein the objective module has an imaging interface on the objective module side and an illumination interface on the objective module side;

said illumination module having an illumination interface on the illumination side;

said objective module communicating with the stand by its objective interface on the objective module side alternately by a top imaging interface or a bottom imaging interface to use the microscope alternately as an upright microscope or as an inverted microscope;

said illumination module being connected to the stand by its illumination interface on the illumination side alternately by a top illumination interface or a bottom illumination interface so that, in connection with the lamp, it alternately makes available a vertical illumination for the upright variant of the microscope or the inverted variant of the microscope;

said objective module being fastened to the stand by its illumination interface on the objective module side by the respective free top illumination interface or bottom illumination interface;

a bottom lamp interface and a top lamp interface being provided opposite from the illumination interfaces, the lamp being attached alternately to this bottom lamp interface or top lamp interface in order to outfit both microscope variants alternately with vertical illumination or transmitted illumination;

said stand being hollow; and

the portions of the first imaging system and second imaging system lying between the tube and the top imaging interface or bottom imaging interface extending within the interior of the stand.

9. (canceled)

10. (currently amended) The invertible optical microscope according to claim 98, wherein the stand has the shape of a 'C', the first side of the 'C' forming the stand base, and the tube being mounted at the second side of the 'C'; wherein both sides have, at their free end, rectangular recesses which face one another, the oppositely located surfaces in the recesses form the top and bottom imaging interfaces, and the surfaces perpendicular thereto form the top and bottom illumination interfaces.

11. (previously presented) The invertible optical microscope according to claim 8, wherein the objective module has an imaging interface on the objective module side and an illumination interface on the objective module side; wherein the objective module is connected to the stand by its illumination interface on the objective module side alternately by a top illumination interface or a bottom illumination interface; wherein the imaging interface on the objective module side alternately communicates with a tube-side tube interface of the tube directly or indirectly by an intermediate tube.

12. (previously presented) The invertible optical microscope according to claim 8, wherein the objective module is fixedly connected to the stand, and the stand is rotated by  $180^\circ$  with its base surface arranged upward in order to invert the upright variant into the inverted variant; wherein the objective module has, on the objective module side, an imaging interface that alternately connects indirectly via a camera tube or an intermediate tube to a tube-side tube interface located at the tube so that the first optical path is determined by the optical elements of the camera tube which participate in the visually accessible imaging and the second optical path is determined by the optical elements of the intermediate tube.

13. (currently amended) The invertible optical microscope according to claim 98, wherein the imaging interfaces, and the illumination interfaces are located in parallel beam paths.

14. (previously presented) The invertible optical microscope according to claim 11, wherein the imaging interfaces, and the illumination interfaces are located in parallel beam paths.